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ABSTRACT

Twenty male and female students with online experience using TICCIT in their freshman English and mathematics courses agreed to individual interviews concerning their opinions of TICCIT as a system of instruction. During each interview a questionnaire was administered, after which 17 questions were asked by the interviewer. Results from the interviews and questionnaires indicated that over 50 percent of the students felt that computer assisted instruction was more effective for retention of learning material and thorough understanding and integration of subject matter, and found it more interesting than discussion. Ninety percent of the subjects indicated that they liked the freedom provided by the learner control capabilities of TICCIT. Appendices include the student interview schedule and questionnaire forms. (CHV)

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Student Opinions of the TICCIT System

March 1976

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Edward W. Schneider

ICUE Technical Report 17

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Student Opinions of the TICCIT System

by Wayne C. Wilcox

INTRODUCTION

TICCIT, meaning Time-shared Interactive Computer-Controlled Information Television, is a computer-assisted instructional system developed for community colleges. Students, by operating keyboard buttons, are able to advance through the course material at their own rates.

The whole course is divided into a series of lessons which are subdivided into segments. For each of these divisions there is an objective. For each objective, there are rules, examples of these rules, and practice items in applying the rules. Students are allowed to select and sequence rule, examples and practice items in order to reach the objective most efficiently and move on. They may also select simpler or more difficult examples, explanations of the rule, and practice items as they prefer.

Because BYU's TICCIT system has only been operational since September 1975, little effort has been made to collect and analyze opinions about the TICCIT system held by students enrolled in TICCIT courses. This study has attempted to examine how students in English 115, a freshman writing and composition class, and students in Math 101, a remedial math course covering basic algebra, react to the TICCIT system. It has tried to discover what they like about TICCIT and what they dislike about it.

METHOD

Subjects

Twenty subjects, ten from the Math 101 class and ten from the English 115 class, were chosen in a semi-random fashion. The telephone numbers of all the students in both classes were randomly ordered. This order was followed in telephoning the students until ten from each class agreed to be interviewed. Among the English students there were four males and six females. The sample of math students included six males and four females. In the sample of English students, each student has had an average of 10.8 hours of on-line experience. In the sample of math students, each student has had an average of 33.7 hours of on-line experience.

Procedure

Separate appointments were made on the telephone for interviews. During each interview, a questionnaire (Appendix 1) was first administered. Next seventeen questions, some of them open-ended and designed to probe, (Appendix 2) were asked by the interviewer. A tape recorder was used to keep a record of the students' verbal responses. Each interview lasted approximately twenty minutes.

Percentages were calculated for the tabulations of responses to the yes/no, multiple alternative, and open-ended questions. For questions using rating scales a mean and a standard deviation were computed. Each scale was bipolar from +1 to -1.

RESULTS AND DISCUSSION

Course and Instruction

Comments made by the students during the interviews suggested to the interviewer that a majority, 55%, liked the TICCIT system very much, while 35% were satisfied with the system but were not particularly fond of it, and 10% felt that it was, as one student put it, "A hunk of junk." This finding was consistent with the responses made to question 18 (figure 18) which indicated that subjects enjoyed TICCIT-based instruction more than other types of instruction. (Mean: .415, standard deviation: .51).

The responses to question 19 (figure 19) also showed a student preference for computer-assisted instruction. Discussion was the second most preferred form of instruction while individual, or home study, was preferred the least. Students were requested to place a "?" in the blank if they had not had experience with any of the listed kinds of instruction, thus eliminating those responses from the rankings, which were scored as follows: CAI: 2.1, discussion: 2.45, tutoring: 2.5, lecture: 3.5, home study: 3.684.

All subjects were asked verbally to compare TICCIT with each form of instruction they had experienced along the following dimensions: retention of material, thorough understanding and integration of the subject matter, enjoyable, anxiety producing, and interesting.

Sixty percent of the subjects thought that TICCIT aided retention better than discussion. Furthermore, 65% of them considered

TICCIT to be superior to discussion in promoting a thorough understanding of the subject matter. The reasons for this superiority were, they claimed, because TICCIT facilitated review and repetition, provided immediate feedback, demanded their complete attention, required a demonstration of mastery by passing tests before being allowed to continue, enabled them to progress at their own rates, and provided rules, examples, and practice items at three levels of difficulty.

One student (5%) could not decide whether he remembered better with TICCIT or discussion. Two students (10%) were ambivalent as to whether TICCIT or discussion resulted in a greater understanding of the subject matter.

Recall was believed by 35% of the subjects to be furthered more by discussion than by TICCIT. Twenty-five percent also felt that understanding was developed more by discussion. When asked why, some students responded that TICCIT cannot be questioned, that it is impossible to share actively one's thoughts and feelings with TICCIT, and that TICCIT has a limited number of examples and practice items.

Fifty-five percent of the subjects found TICCIT more enjoyable than discussion. They attributed this liking to their growing competence in the subject matter due to TICCIT's efficient manner of instruction, the novelty of working on TICCIT, and the individualized pacing possible with TICCIT.

Twenty percent of the students rated TICCIT and discussion as being equally enjoyable. But, 25% enjoyed discussion more than TICCIT, pointing out TICCIT's impersonal nature. It is difficult,

they said, to have social interaction and interchange of opinions with a machine.

Fear of appearing uninformed and being shy in social situations were major reasons why 35% of the students reported feeling less anxiety with TICCIT than with class discussions. Forty percent noticed no difference in the anxiety levels produced. Because of the frustration of sometimes having to wait for TICCIT to respond or of inadvertently pushing a wrong button, 25% felt that TICCIT was more anxiety-producing than discussion.

Fifty percent rated TICCIT as being more interesting than discussion. These students emphasized TICCIT's novelty and mentioned that TICCIT held their attention and "wouldn't let you go to sleep."

Thirty percent of the subjects said that it depended upon the quality of students participating in the discussion groups and the subject being discussed as to whether the discussion was boring or interesting. However, 20% rated discussion as more stimulating than TICCIT because discussion typically provided student interaction and exchange of opinions.

Except for a few ambivalent responses, TICCIT was almost completely favored along each dimension when compared to lecture. The same finding was also recorded for home study and tutoring. One student remarked that although TICCIT and home study were very similar, TICCIT was much more convenient and motivating. Other subjects who had taken home study courses expressed the same opinion.

In response to the interview question of which courses would be

most profitable to take on the TICCIT system, 80% of the subjects included math, 50% mentioned English, and 20% added history or the sciences. Only two students (10%) said that they would like to take any class on the TICCIT system. But, another two (10%) stated that they would not take another TICCIT course regardless of the subject. Statistics, accounting, typing, and speed reading were also listed by students as TICCIT courses that they would enjoy taking.

When asked if TICCIT had a personality, 75% said yes. Forty percent of those who said yes (6 students) characterized TICCIT as stubborn. Other comments portrayed TICCIT's personality as personal, fun, knowledgeable, humorous, exciting, and even concerned.

The answers to question 20 (figure 20) indicated that half of the subjects believed that the novelty of learning with TICCIT was wearing off. The other 50% have not yet felt a diminishing of that effect. However, nearly all of the students (90%) said that they probably would not be less motivated even if the novelty disappeared.

According to the responses to question 21 (figure 21), conversations with the instructors were quite helpful. (Mean: .59, standard deviation: .51). Conversations with the proctors were also beneficial. (Mean: .475, standard deviation: .52). Talking to other students was less helpful. (Mean: .08, standard deviation: .67). In the interviews it was found that only 20% of the subjects talked often to other students. The most common topics of the student-to-student conversations were how they like TICCIT, where they were in the course, shared gripes, and current class assignments.

Four English students were ahead of schedule by an average of 1.125 lessons, whereas only two of the math students were ahead. They were ahead by an average of 1.5 lessons. Only two English students were behind (average of 1.67 lessons behind). Altogether, 30% of the subjects were ahead, 40% were behind, and 30% were on schedule. During the interviews, 45% of the subjects admitted that they had a tendency to procrastinate in their TICCIT classes.

Fifty percent expressed a preference for imposed deadlines while the other half would rather have suggested guidelines only.

Answers to question 23 (figure 23) showed that 60% would favor weekly deadlines, 30% would like deadlines every two weeks, and 10% would prefer monthly deadlines. It is interesting to note that 80% of the English students wanted weekly deadlines with 10% desiring monthly deadlines and 10% wanting deadlines every two weeks. On the other hand, a mere 40% of the math students favored weekly deadlines, with 50% of them for deadlines every two weeks, and 10% wanted monthly deadlines.

Learner Control

The responses to question 14 (figure 14) indicated that students were not well agreed about the amount of difficulty encountered in getting the system to do what they wanted it to do. In general, they did not find the system especially cooperative or unmanageable. (Mean: $-.06$, standard deviation: $.53$).

Ninety percent of subjects said they liked the freedom that the learner control capabilities of TICCIT furnished. The other 10%

stated that the learner control functions were too confusing and cumbersome. None of the English students believed that having just rule, example, practice, and help was too constraining as the responses to question 15 (figure 15) showed. But, 20% of the math students felt constrained and 40% of them thought that more buttons were needed while only 10% of the English students wanted more buttons.

Some additional capabilities which many of the math students in particular would like to see incorporated by TICCIT were:

1. A single frame backup key. At present, REPEAT and BACK return the student to the start of any multipage item. A new key would be especially helpful to use on tests, the students said. However, by allowing students to repeat items of a test, the current testing model used by TICCIT of continuous presentation of different test items until a certain mastery level is achieved would need to be modified.
2. A correction key. Some students (25%) complained that they occasionally entered incorrect information by mistakenly pressing the wrong button. A correction key would allow them to erase such errors. Much frustration during tests could be alleviated with a correction procedure.
3. A derivation key. Three students (15%) would like to be able to trace the derivation of rules from their more basic component parts.

Almost everyone (95%), as the responses to question 17 (figure 17) demonstrated, liked to formulate their own learning tactics using TICCIT's learner control functions.

All of the students seemed to prefer the tactic to which they have gradually become accustomed. Fifty percent went from an objective to the rule to practice. Forty percent followed the routine of objective, rule, example, and practice. One English student (5%) went directly from the objective to hard practice. Another student (5%) preferred to move from objective directly to practice and then to the rule.

Although the variation of responses to question 17 (figure 17) was large, the students reported that they seldom used the survey mode, utilized the review mode only about half of the time, rarely watched videotapes, and often used the mini-lessons. (Survey mode--mean: $-.53$, standard deviation: $.72$; review mode--mean: $-.12$, standard deviation: $.77$, videotapes--mean: $-.55$, standard deviation: $.68$, mini-lessons--mean: $.14$, standard deviation: $.84$).

In the interviews it was discovered that 90% of the subjects had not even used the videotapes at all. Fifteen percent had requested a videotape, but because of the delay encountered never viewed it. Others said that videotapes were not essential and required too much time. Others commented that videotapes were too loud and they were afraid of creating a disturbance by using one. The few who viewed the videotapes complained that they shut off before actually ending.

In describing how they decided when to take the tests, 45% of the subjects based their decision on feelings generated by their performance on the practice items. Forty percent relied solely on the advisor and would take the tests as soon as they were available. Three students (15%) said that only after completing all the practice items in the file would they take a test. Thirty percent suggested that a pretest might be appropriate but the other 70% disagreed.

Physical Arrangements

Lighting and Vision - Responses to question 1 (figure 1) indicated that the room lighting was just about right, although a few would prefer it a little brighter. (Mean: .075 on the too dark side, standard deviation: .197).

Responses to question 2 (figure 2) showed that the students were not bothered much by glare or reflection. (Mean: .5, standard deviation: .55). They also noticed little glare or reflection directly on the screen as indicated by question 4 (figure 4). (Mean: .48, standard deviation: .52).

Students were able to read the material on the screen quite well on the average, although their opinions varied somewhat. Question 3 (figure 3). (Mean: .225, standard deviation: .61).

Responses to question 5 (figure 5) indicated that the brightness of the image screen was about what the majority of the students wanted. (Mean: .035 on the too dark side, standard deviation: .34).

Color and Graphics - One color-blind student could not discriminate yellows and greens, but generally students felt that the

use of color in the presentations was very helpful. See the responses to question 6 (figure 6). (Mean: .695, standard deviation: .445).

Blue and green were the colors that students liked to read the most while white and cyan were the least popular. See the responses to question 7 (figure 7). (Mean: blue 2.8, green 3.05, yellow 3.2, red 3.7, black 3.85, cyan 4.2, white 4.2). The order of preference among the English students was somewhat different. They liked green and blue the most and black and cyan the least. Math students favored blue and yellow and disliked red, cyan, and white. (English means: green 2.5, blue 3.2, yellow 3.3, red 3.4, white 4.0, black 4.2, cyan 4.4, Math means: blue 2.4, yellow 3.1, black 3.5, green 3.6, red 4.0, cyan 4.0, white 4.4).

In response to question 8 (figure 8) students found the text and graphics to be clear and easy to follow with a fair amount of disagreement. (Mean: .225, standard deviation .42).

Carrel Design - Fifty-five percent of the students preferred the wedge-shaped carrels. They claimed that the wedge carrels aided concentration and were more private. Twenty-five percent liked the open carrels for being less confining and more accessible to the proctors. One girl also admitted that she enjoyed talking and preferred open carrels for that reason.

Forty-five percent of the subjects would favor having more desk space for writing, especially in the wedge carrels. Nevertheless, answers to question 9 (figure 9) indicated that the students found the carrels comfortable, even though not all agreed on this point.

(Mean: .205, standard deviation: .63).

Extraneous noise was a disturbing element for many of the students. Some found it very bothersome, while others gave it little attention. See the tabulations to question 10 (figure 10). (Mean: -.1, standard deviation: .69).

The spatial relationships between the desk, chair, and screen were considered to be about right by 85% of the students. Two subjects (10%) wanted the screen to be closer. One (5%) wanted it to be further away. An unusually tall girl would like the screen raised since its present position caused her to have to constantly slouch or lower her head. Responses to question 11 (figure 11) confirmed these verbal reports, showing that the distance between the screen and the chair is about right. (Mean: -.01 on the too close side, standard deviation: .19).

Keyboard Design - The answers to question 12 (figure 12) indicated that the labels on the buttons do agree well with their functions. (Mean: .4, standard deviation: .41).

Three keyboard layout design selections were shown to each student. (Appendix 3). Seventy percent of the English students selected the present keyboard design (design Y) without any changes. The primary reason for this choice, they said, was habit. Accustomed to the present keyboard arrangement, they felt that any alterations would not be helpful. Twenty percent of the English students thought that the changes in the arrangement of the learner control keys as in design X might be beneficial since the GO key is used more often.

Only one English student (10%) wanted to have the numbers grouped together as in design Z. However, the math students saw a great advantage in having the numbers grouped together along with the operations of add, subtract, multiply, and divide. Eighty percent of them selected design Z while only 20% chose design Y. One student suggested that another grouping of commonly used letters, such as a, b, c, d, and e, be supplied.

Additional Suggestions and Criticisms

Seventy percent of the English students (35% of all subjects) expressed a desire to have an audio system with earphones, which would enable them to hear as well as read the instructions being given.

Twenty-five percent of the students mentioned encountering mistakes in the program. They said that debugging should be a continued concern of the TICCIT programmers.

Occasionally the TICCIT system is unexpectedly inoperative. Thirty percent of the students voiced displeasure over these occasional delays.

Twenty percent of the students said that the scheduling of the TICCIT system should be more flexible.

Three students (15%) wanted more contact with the instructors. One felt a need to have more proctors made available.

According to three students (15%), the exams given by the instructors should correspond better with the instruction provided by TICCIT.

Fifteen percent would appreciate being able to give an equivalent answer, instead of being restricted to one specified form.

Two students (10%) thought that better initial instructions about operating the computer terminal should be supplied.

Comparison with Asay's Study

In 1973 a preliminary study conducted by Calvin Asay and Edward Schneider attempted to evaluate student acceptance of the TICCIT system. Twenty high school seniors were used as subjects. They were briefly exposed to the TICCIT system, completing two English instructional segments. Then they were given a questionnaire which asked many of the same or very similar questions to those used in this study's questionnaire.

Question 10 of Asay's study was the same as question 1 of this study in which the room lighting was rated. This paper's findings (Mean: .075, standard deviation: .197) were significantly different at .01 level from Asay's results (Mean: -.08, standard deviation: .1). In other words, the subjects in Asay's study thought the lights were brighter than subjects in this study. This difference was probably due to the fact that Asay's study was carried out at a time when TICCIT was located in a different room which was brightly illuminated.

Question 11 of Asay's study corresponded to question 2 of this study, Question 12 to question 4, question 13 to question 3, question 14 to question 5, question 15 to question 6, question 9 to question 10, question 17 to question 11, question 8 to question 15, and question 1 to question 19. In each of these cases, there were no significant.

differences between Asay's results and those of this study.

With the color rankings (question 16 of Asay's study and question 7 of this study), red was less preferred in this study. ($2.83 < 3.7$). Green was also less preferred in this study as was cyan. ($2.67 < 3.05$; $3.62 < 4.2$). Black was more preferred in this study than in Asay's. ($4.8 > 3.85$). The other colors were rated approximately the same in both studies.

Question 19 of this study parallels question 6 of Asay's study in which preferences for various kinds of instruction were ranked. Lecture was better liked in this study. ($4.29 > 3.5$). Discussion was less liked in this study. ($1.53 < 2.45$). CAI was slightly more liked by the subjects of this study. ($3.19 > 2.5$). Individual study was about the same in both studies, but was somewhat more favored by Asay's subjects. ($3.18 < 3.684$).

SUMMARY

The most important findings of this study were as follows:

1. Students using TICCIT prefer it to the more conventional forms of instruction.
2. Students using TICCIT feel that it has a personality, most commonly characterized as "stubborn."
3. Students using TICCIT believe that supplemental conversations with instructors and proctors are very helpful.
4. Students tend to have mixed feelings about work schedules, half preferring imposed deadlines and half preferring

suggested guidelines.

5. Students like the freedom which the learner control capabilities of TICCIT provided.
6. Students use the mini-lessons the most and watch the videotapes the least.
7. Students think that the present lighting and physical arrangement of the carrels are adequate.
8. Students like the use of color, preferring blue and green to the other colors.
9. The students taking English prefer the present keyboard design while students taking math would change to a new design.
10. The students taking English also desire to have an audio system with an earphone to enable them to hear instructions as well as read them.

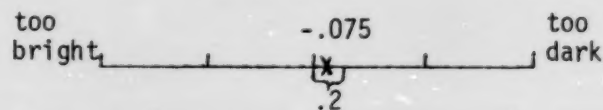
FIGURE AND GRAPH SECTION

Institute for Computer Uses in Education Student Questionnaire

I. Physical Arrangements

A. Lighting and Vision

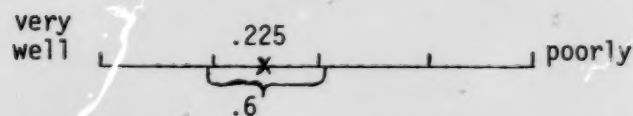
1. How is the room lighting?



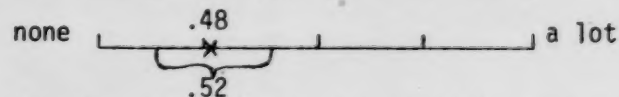
2. To what degree are you bothered with glare and/or reflection?



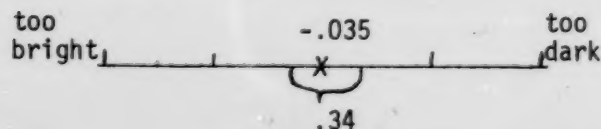
3. How well are you able to read material on the TV screen?



4. How much glare and/or reflection do you notice on the TV screen?

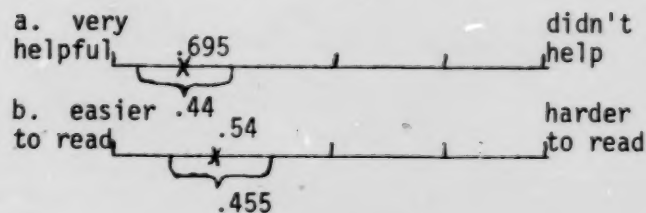


5. How do you feel about the brightness of the image on the TV screen?

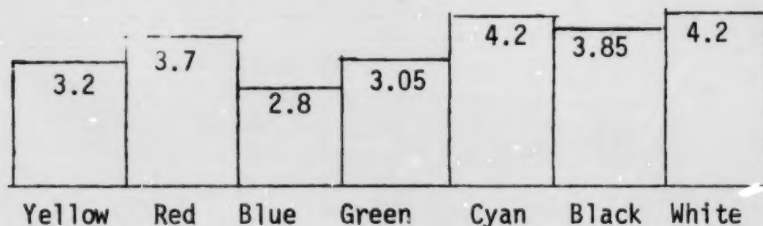


B. Color and Graphics

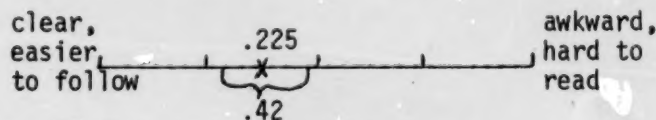
6. What are your feelings concerning the use of color in the presentations of the material?



7. Which color text do you like to read most? Least?
Rank colors listed below from 1 to 5. One is your favorite. Five is the color you like least.

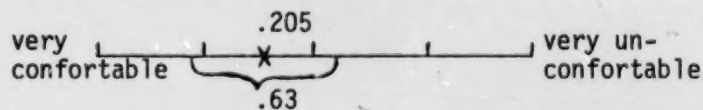


8. Is the layout of text and graphics good or bad?

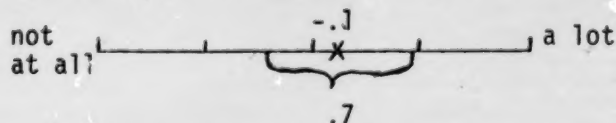


C. Carrel Design

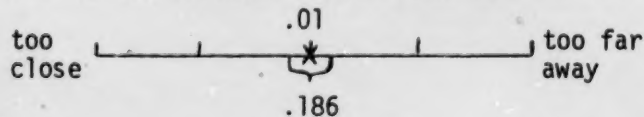
9. Are the carrels comfortable places to work?



10. Does extraneous noise bother you?



11. How is the distance between you and the TV?

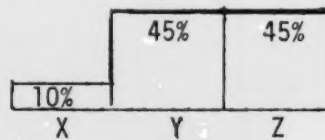


D. Keyboard Design

12. Do you think that the labels on the buttons are good? (I.e., agree with what you see when you push them?)

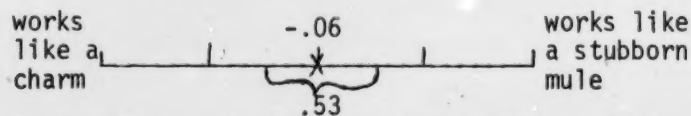


13. Which of the keyboard layouts on the diagram sheet of this questionnaire would you prefer, X, Y, or Z?

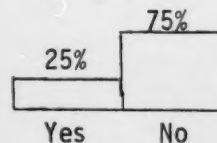
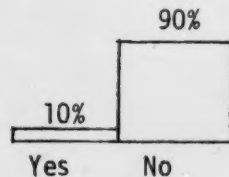


II. Learner Control

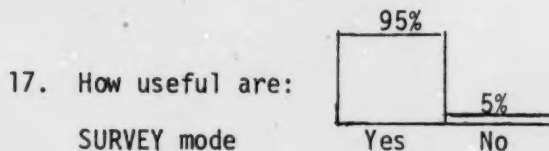
14. How much difficulty do you encounter in getting the system to do what you want it to do?



15. Do you believe that having just RULE, EXAMPLE, PRACTICE, and HELP is too constraining? Does the system need some more buttons that would allow further control of the instruction?



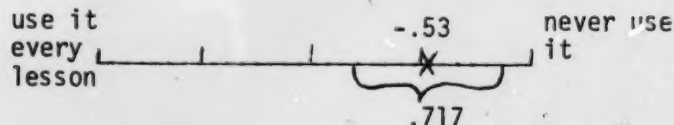
16. Do you like to formulate your own learning tactics using the Learner Control functions of TICCIT?



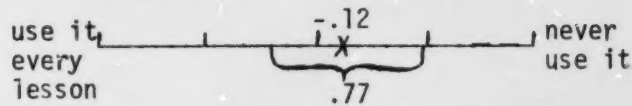
17. How useful are:

SURVEY mode

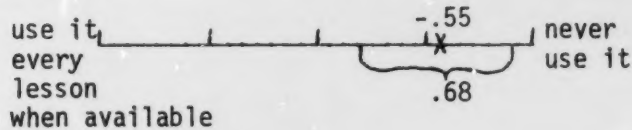
use it every lesson



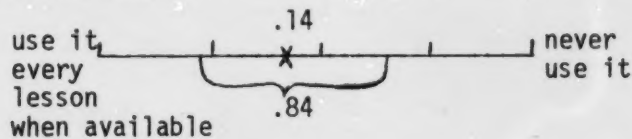
REVIEW mode



VIDEOTAPES

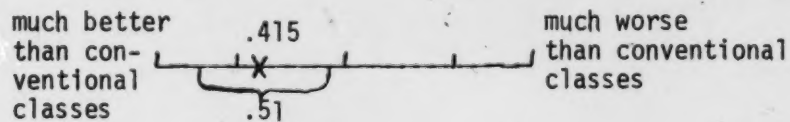


MINILESSONS

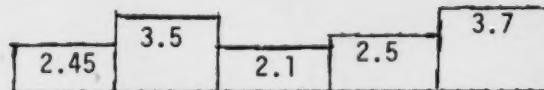


III. Course and Instruction

18. Do you enjoy this experience of learning on TICCIT compared with other types of instruction?

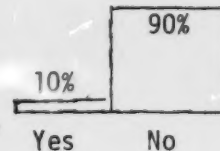
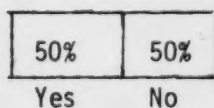


19. What kinds of instruction do you prefer? Rank the types listed below from 1 to 5, one is favorite, five is least liked. (If you have not had enough experience with some of these, rate them "?").

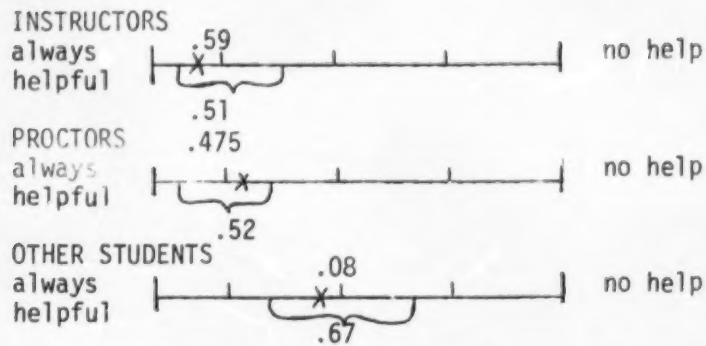


Discussion Lecture TICCIT Tutor Individual Study

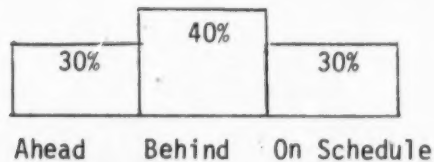
20. Is the novelty of TICCIT wearing off? _____ Does it matter if it does? _____



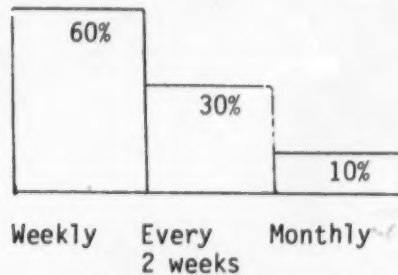
21. How helpful are conversations with:



22. How far (in number of lessons) ahead or behind the class schedule are you, right now? _____ Number of lessons (ahead, behind -- circle the appropriate one).



23. To help you finish the course on time, how often should deadlines occur? (Check one).



APPENDICES

FIGURE AND GRAPH SECTION

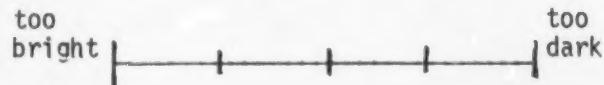
Institute for Computer Uses in Education

Student Questionnaire

I. Physical Arrangements

A. Lighting and Vision

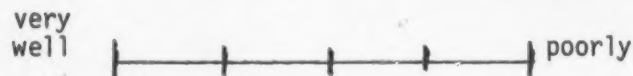
1. How is the room lighting?



2. To what degree are you bothered with glare and/or reflection?



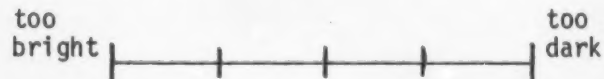
3. How well are you able to read material on the TV screen?



4. How much glare and/or reflection do you notice on the TV screen?

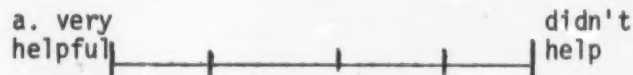


5. How do you feel about the brightness of the image on the TV screen?



B. Color and Graphics

6. What are your feelings concerning the use of color in the presentations of the material?



7. Which color text do you like to read most? Least? Rank colors listed below from 1 to 5. One is your favorite. Five is the color you like least.

_____ Yellow
_____ Red
_____ Blue
_____ Green
_____ Cyan (turquoise)
_____ Black
_____ White

8. Is the layout of text and graphics good or bad?

awkward, clear,
hard to easier to follow



C. Carrel Design

9. Are the carrels comfortable places to work?

very very un-
comfortable comfortable



10. Does extraneous noise bother you?

a lot not at all



11. How is the distance between you and the TV?

too close too far away



D. Keyboard Design

12. Do you think that the labels on the buttons are good? (I.e., agree with what you see when you push them?)

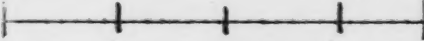
agree don't agree
very much at all



13. Which of the keyboard layouts on the diagram sheet of this questionnaire would you prefer, X, Y, or Z?

II. Learner Control

14. How much difficulty do you encounter in getting the system to do what you want it to do?

works like a charm  works like a stubborn mule

15. Do you believe that having just RULE, EXAMPLE, PRACTICE, and HELP is too constraining? _____ Does the system need some more buttons that would allow further control of the instruction? _____

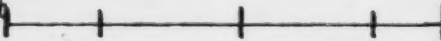
Definition of tactics: The selection and sequencing of instructional components (RULE, EXAMPLE, etc.) used to master the segments.

16. Do you like to formulate your own learning tactics using the Learner Control functions of TICCIT?

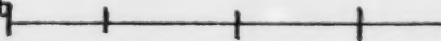
Yes _____ No _____

17. How useful are:

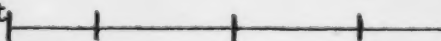
SURVEY mode

never use it  use it every lesson

REVIEW mode

never use it  use it every lesson

VIDEOTAPES

never use it  use it every lesson when available

MINILESSONS

never use it  use it every lesson when available

III. Course and Instruction

18. Do you enjoy this experience of learning on TICCIT
Compared with other types of instruction?

much better
than con-
ventional
classes |-----| much worse
than con-
ventional
classes

19. What kinds of instruction do you prefer? Rank the types
listed below from 1 to 5. One is the favorite. Five is
the least liked. (If you have not had enough experience
with some of these, rate them "?").

____ discussion
____ lecture
____ computerized instruction (TICCIT)
____ private tutor
____ individual study

20. Is the novelty of TICCIT wearing off? ____ Does it
matter if it does? ____

21. How helpful are conversations with:

INSTRUCTORS

no help |-----| always helpful

PROCTORS

no help |-----| always helpful

OTHER STUDENTS

no help |-----| always helpful

22. How far (in number of lessons) ahead or behind the class
schedule are you, right now? ____ number of lessons (ahead)
(behind) -- circle the appropriate one.

23. To help you finish the course on time, how often should
deadlines occur? (Check one).

____ Weekly ____ Monthly ____ End of Semester
____ Every 2 weeks ____ Every 6 weeks
____ Mid-Semester

INTERVIEW SCHEDULE

Do you prefer open or wedge-shaped carrels?

Why?

Are the spatial relationships between the chair, desk, keyboard, and screen about right? (Probe).

Why did you prefer the _____ style keyboard?

Do you like the learning control options available on TICCIT?
(Probe).

What other features or capabilities would you add?

What is your typical routine or tactic?

How do you decide when you are ready to take a test?

What information not presently available could be supplied to aid you in making this decision?

Would you like to have more or less videotape presentations?

Why?

INTERVIEW SCHEDULE

Many persons who have worked on TICCIT say that it has a personality.

Do you find this to be true? (Probe).

Which courses would you most like to take on a TICCIT system?

Compare TICCIT with each type of instruction (discussion, lecture, tutor, individual study) that you have had experience with along the following dimensions:

- a. retention of material
- b. thorough understanding and integration of the subject matter
- c. enjoyable
- d. anxiety producing
- e. interesting

When you talk with other students taking a TICCIT class, what do you talk about?

Do you tend to procrastinate in your TICCIT class?

Why?

What suggestions or criticisms can you offer about anything concerning TICCIT?

↑	→	A ^x
←	↓	A _x
MARK	NOTE	TAB
JUSFY	ERASE	INSRT
ENTER		

	!	@	#	\$	%	¢	&	*	(	)	=	^	+ ^v
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SHIFT LOCK	A ^α	S ^Σ	D ⁸	F ^Δ	G ^κ	H ^λ	J [→]	K [←]	L [!]	:	↑	"	↓
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	Z	X	C	V	B	N	M	,	.	/			

AD- VICE	ATT'N	EXIT
SKIP	BACK	RE- PEAT

MAP	RULE	HARD
OBJ	EX	EASY
GO	PRAC	HELP

CHOICE



		A*
		A _x
MARK	NOTE	TAB
JUSTY	ERASE	INSRT
ENTER		

	!	@	#	\$	%	¢	£	*	(	)	^	+	^
	1	2	3	4	5	6	7	8	9	0	=	+	^
ALT CODE	{	}	€	√	θ	°	u	n	ø	π	]	]	ALT CODE
SHIFT LOCK	Q	W	E	R	T	Y	U	I	O	P	[	[	SHIFT LOCK
SHIFT	α	Σ	8	Δ	ℵ	ℓ	→	←		;	;	;	SHIFT
	A	S	D	F	G	H	J	K	L	:	:	:	
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	Z	X	C	V	B	N	M	,	.	/			

ATT'N	EXIT	RE- PEAT
GO	SKIP	BACK
OBJ	MAP	AD- VICE
HELP	HARD	EASY
RULE	EX	PRAC

CHOICE



33

34

7	8	9
4	5	6
1	2	3
0	+	÷
ENTER		

!	↑	@	↓	#	→	←	%	¢	&	*	(	)	^	√
MARK	NOTE	TAB	JUSTY	ERASE	INSRT	=	=							
ALT CODE	A [*]	A _x	E	√	θ	°	U	^	ø	π	]	■		RETURN
SHIFT LOCK	A ^α	Σ	8	Δ	R	λ	→	←	I	:↑	"↓			
SHIFT	<	≤	c	{	B	#	}	{	}	?	□		SHIFT	
	Z	X	C	V	B	N	M	,	.	/				

ATT'N	EXIT	RE-PEAT
GO	SKIP	BACK
OBJ	MAP	AD-VICE
HELP	HARD	EASY
RULE	EX	PRAC

CHOICE

Z

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Asay, Calvin S., & Schneider, Edward W. "Student Acceptance of the TICCIT System, A Preliminary Study". ICUE Technical Report No. 3, Division of Instructional Research and Evaluation, Institute for Computer Uses in Education, Brigham Young University, Provo, Utah.